

§213.127

be tie plates under the running rails on at least eight of any 10 consecutive ties.

(b) In Classes 3 through 5 track no metal object which causes a concentrated load by solely supporting a rail shall be allowed between the base of the rail and the bearing surface of the tie plate. This paragraph (b) is applicable September 21, 1999.)

§213.127 Rail fastening systems.

Track shall be fastened by a system of components which effectively maintains gage within the limits prescribed in §213.53(b). Each component of each such system shall be evaluated to determine whether gage is effectively being maintained.

§213.133 Turnouts and track crossings generally.

(a) In turnouts and track crossings, the fastenings shall be intact and maintained so as to keep the components securely in place. Also, each switch, frog, and guard rail shall be kept free of obstructions that may interfere with the passage of wheels.

(b) Classes 3 through 5 track shall be equipped with rail anchoring through and on each side of track crossings and turnouts, to restrain rail movement affecting the position of switch points and frogs. For Class 3 track, this paragraph (b) is applicable September 21, 1999.)

(c) Each flangeway at turnouts and track crossings shall be at least 1½ inches wide.

§213.135 Switches.

(a) Each stock rail must be securely seated in switch plates, but care shall be used to avoid canting the rail by overtightening the rail braces.

(b) Each switch point shall fit its stock rail properly, with the switch stand in either of its closed positions to allow wheels to pass the switch point. Lateral and vertical movement of a stock rail in the switch plates or of a switch plate on a tie shall not adversely affect the fit of the switch point to the stock rail. Broken or cracked switch point rails will be subject to the requirements of §213.113, except that where remedial actions C, D, or E require the use of joint bars, and

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joint bars cannot be placed due to the physical configuration of the switch, remedial action B will govern, taking into account any added safety provided by the presence of reinforcing bars on the switch points.

(c) Each switch shall be maintained so that the outer edge of the wheel tread cannot contact the gage side of the stock rail.

(d) The heel of each switch rail shall be secure and the bolts in each heel shall be kept tight.

(e) Each switch stand and connecting rod shall be securely fastened and operable without excessive lost motion.

(f) Each throw lever shall be maintained so that it cannot be operated with the lock or keeper in place.

(g) Each switch position indicator shall be clearly visible at all times.

(h) Unusually chipped or worn switch points shall be repaired or replaced. Metal flow shall be removed to insure proper closure.

(i) Tongue & Plain Mate switches, which by design exceed Class 1 and excepted track maximum gage limits, are permitted in Class 1 and excepted track.

§213.137 Frogs.

(a) The flangeway depth measured from a plane across the wheel-bearing area of a frog on Class 1 track shall not be less than 1¾ inches, or less than 1½ inches on Classes 2 through 5 track.

(b) If a frog point is chipped, broken, or worn more than five-eighths inch down and 6 inches back, operating speed over the frog shall not be more than 10 m.p.h.

(c) If the tread portion of a frog casting is worn down more than three-eighths inch below the original contour, operating speed over that frog shall not be more than 10 m.p.h.

(d) Where frogs are designed as flange-bearing, flangeway depth may be less than that shown for Class 1 if operated at Class 1 speeds.

§213.139 Spring rail frogs.

(a) The outer edge of a wheel tread shall not contact the gage side of a spring wing rail.

(b) The toe of each wing rail shall be solidly tamped and fully and tightly bolted.

(c) Each frog with a bolt hole defect or head-web separation shall be replaced.

(d) Each spring shall have compression sufficient to hold the wing rail against the point rail.

(e) The clearance between the holddown housing and the horn shall not be more than one-fourth of an inch.

§213.141 Self-guarded frogs.

(a) The raised guard on a self-guarded frog shall not be worn more than three-eighths of an inch.

(b) If repairs are made to a self-guarded frog without removing it from service, the guarding face shall be restored before rebuilding the point.

§213.143 Frog guard rails and guard faces; gage.

The guard check and guard face gages in frogs shall be within the limits prescribed in the following table—

Class of track	Guard check gage The distance between the gage line of a frog to the guard line ¹ of its guard rail or guarding face, measured across the track at right angles to the gage line ² , may not be less than—		Guard face gage The distance between guard lines ¹ , measured across the track at right angles to the gage line ² , may not be more than—	
Class 1 track	4' 6 1/8"	.....	4' 5 1/4"	.....
Class 2 track	4' 6 1/4"	.....	4' 5 1/8"	.....
Class 3 and 4 track	4' 6 3/8"	.....	4' 5 1/8"	.....
Class 5 track	4' 6 1/2"	.....	4' 5"	.....

¹ A line along that side of the flangeway which is nearer to the center of the track and at the same elevation as the gage line.
² A line 5/8 inch below the top of the center line of the head of the running rail, or corresponding location of the tread portion of the track structure.

